

CLAIMS:

1. A spindle motor including a stator component, a rotor component, including a hub for supporting one or more discs, and a bearing assembly between the components, formed of a journal bearing and a thrust bearing, wherein the journal bearing is an aerodynamic bearing and the thrust bearing is adapted to function in a bi-directional manner and includes an annular member projecting radially from one of the components into an associated recess formed in the other of the components.

2. A spindle motor as claimed in claim 1, wherein the annular member has two opposed bearing faces arranged adjacent corresponding bearing surfaces of the recess, and a hydrodynamic bearing is formed between the respective bearing faces and surfaces.

3. A spindle motor as claimed in claim 2, wherein the journal bearing is formed between a shaft of one of the components and an associated sleeve of the other one of the components and the shaft is provided with a passage extending therethrough for providing air flow through the motor to the aerodynamic bearing, so as to allow air to be entrained into the journal bearing during operation.

4. A spindle motor as claimed in claim 3, wherein the bearing surfaces diverge from the bearing faces adjacent the shaft so that liquid between the annular member and the recess is retained therebetween by surface tension seals.

5. A spindle motor as claimed in claim 3 or 4, wherein the shaft includes a thrust bearing passageway which includes a port opening adjacent the annular member, between the thrust bearing and the journal bearing for equalising air pressure at either side of the journal bearing.

6. A spindle motor as claimed in any one of claims 3 to 5, wherein the shaft is fixed relative to the stator and the sleeve forms part of the rotor.

7. A spindle motor as claimed in claim 4, wherein the annular member or shaft includes an annular groove to either side of the annular member to further assist in formation of the surface tension seals.